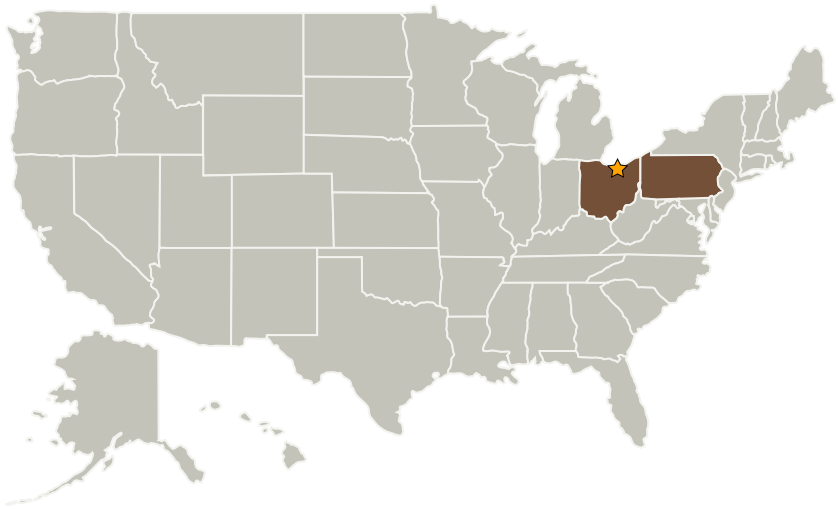
Slot Coupled Patch Array Antenna Technology, Phase I

Completed Technology Project (2009 - 2009)

Project Introduction

The proposed project is an antenna array whose beam is controlled digitally. The Phase 1 effort will assess the method needed to achieve the gain, bandwidth, and pattern (3 dB beam-width and scan field of view). This is based on the level of curvature and interference/geometry of the vehicle on which it is to be mounted. Phase 1 focuses on the fabrication and testing of one element and a sub-array of four elements on a similar surface such as a metallic or dielectric with some degree of curvature. Phase 1 also uses the LMS algorithm to adaptively perform beam shifting and correction for phase shift. Phase 2 will increase the number of elements in the array and allow for scanning in both planes. Also, Phase 2 will consider more complicated geometry as required to deliver a functioning antenna array mounted to the space vehicle.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Glenn Research Center(GRC)	Lead Organization	NASA Center	Cleveland, Ohio
Nokomis, Inc.	Supporting Organization	Industry	Charleroi, Pennsylvania

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Glenn Research Center (GRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Ohio	Pennsylvania

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
  - TX05.2 Radio Frequency
    - TX05.2.6 Innovative Antennas